



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

NOTICE OF ALLOWANCE AND ISSUE FEE DUE

WM01/1010

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APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
09/383,812	08/26/99	021	CORSARO, N	2684 10/10/01
First Named Applicant	ZELMANOVICH,	35 USC 154(b) term ext. =	0 Days.	

TITLE OF INVENTION METHOD FOR TRACKING THE LOCATION OF MOBILE UNITS

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
2 INTECH204-IJ	455-456.000	N32	UTILITY	NO	\$1280.00	01/10/02

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED.

THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.

HOW TO RESPOND TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

- A. If the status is changed, pay twice the amount of the FEE DUE shown above and notify the Patent and Trademark Office of the change in status, or
- B. If the status is the same, pay the FEE DUE shown above.

If the SMALL ENTITY is shown as NO:

- A. Pay FEE DUE shown above, or
- B. File verified statement of Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.

II. Part B-Issue Fee Transmittal should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B Issue Fee Transmittal should be completed and returned. If you are charging the ISSUE FEE to your deposit account, section "4b" of Part B-Issue Fee Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give application number and batch number. Please direct all communications prior to issuance to Box ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PATENT AND TRADEMARK OFFICE COPY

Notice of Allowability

Application No.
09/383,812

Applicant(s)

Helena Zelmanovich

Examiner

Nick Corsaro

Art Unit

2684



--The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance and Issue Fee Due or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 09/04/2001
2. ☒ The allowed claim(s) is/are 43, 45-56, and 72-79
3. ☐ The drawings filed on _____ are acceptable as formal drawings.
4. ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☒ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- *Certified copies not received: _____

5. ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE FOR SUBMITTING NEW FORMAL DRAWINGS, OR A SUBSTITUTE OATH OR DECLARATION.** This three-month period for complying with the REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL is extendable under 37 CFR 1.136(a).

6. ☐ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.
7. ☐ Applicant MUST submit NEW FORMAL DRAWINGS
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No. _____
- (b) ☐ including changes required by the proposed drawing correction filed _____, which has been approved by the examiner.
- (c) ☐ including changes required by the attached Examiner's Amendment/Comment or in the Office action of Paper No. _____

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

8. ☐ Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Any reply to this letter should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE/SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF ALLOWANCE should also be included.

Attachment(s)

- 1 ☒ Notice of References Cited (PTO-892)
- 2 ☐ Notice of Informal Patent Application (PTO-152)
- 3 ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 4 ☐ Interview Summary (PTO-413), Paper No. _____
- 5 ☐ Information Disclosure Statement(s) (PTO-1449), Paper No(s). _____
- 6 ☐ Examiner's Amendment/Comment
- 7 ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
- 8 ☒ Examiner's Statement of Reasons for Allowance
- 9 ☐ Other

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REASONS FOR ALLOWANCE

Allowable Subject Matter

1. Claims 43, 45-56, and 72-79 are allowed.
2. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record does not teach or suggest a method for tracking the location of mobile units wherein the mobile is poled to return transmission to a base station having three or more antenna elements where the signal is received by said three or more antenna's at the same base station, and the phase difference is measure between each of the elements where a calculation is made on location based on the relative location of each of the antennal elements to each other and the phase difference between the antenna elements, such that the location is determine by a single base station in polar coordinates. Further the prior art of record does not teach using a reference transmitter to make calculations as just stated above, and using those calculations to correct future location measurements of non reference stations.

Previously cited reference Maloney et al. (4,728,959) discloses a method of tracking mobiles using the phase angle measurements at three or more antennas at a base station however Maloney is disclosing that the three or more elements amounts to three pairs of elements where the phase is measured between elements in a pair the phase difference measurement for the location calculation is taken from the pair with the most simultaneous reception of the signal. The calculation is then made from several base stations and their phase measurements at there

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respective pairs. Maloney however fails to teach making the location measurement based on three antenna elements at one base station wherein the phase difference between the three elements is measured and location is determined by the phase difference between the three elements and the relative locations of the three elements to each other at one base station without using other base stations.

Newly found reference Sullivan et al. (6,233,459) uses three or more antenna elements at a single base station to determine the location of a mobile, however Sullivan is teaching using time difference of arrival at each element using a synchronization of time between the base station and mobile using GPS signals or other to synchronize the clocks. Sullivan discloses that the invention is used so that triangulation does not have to be used, and therefore teaches away. Sullivan does not teach using the phase difference of signals received at three or more of the elements and the position of the elements at one base station to find location of the mobile.

Newly found Reference Pfeil et al. (6,252,867) uses the phase difference at three or more antenna elements however, Pfeil lacks a filing date prior to the applicants filing date and does not qualify as prior art. Further, Pfeil teaches using Direction Of Arrival but does not specifically teach the above stated method.

Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nick Corsaro whose telephone number is (703) 306-5616.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Hunter, can be reached at (703) 308-6732. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks


Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist). Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Nick Corsaro



DANIEL HUNTER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600